

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for inducing differentiation of mammalian embryonic stem cells into insulin-producing cells, which comprises ~~the steps of performing the following steps, in order from (A) to (D) as follows:~~

- (A) ~~culturing propagating~~ mammalian embryonic stem cells together with feeder cells with a medium comprising leukemia inhibitory factor;
- (B) ~~culturing the generating embryoid bodies from propagated cells obtained from step (A) by culturing the cells obtained from step (A) in absence of feeder cells with~~ in a medium comprising leukemia Inhibitory factor and basic fibroblast growth factor (bFGF) in a suspension culture ~~condition~~ to give embryoid bodies;
- (C) ~~culturing selecting~~ the obtained ~~embryonic~~ embryoid bodies by incubating the embryoid bodies in with a selection-expanding medium; and then
- (D) ~~culturing differentiating~~ the cells obtained from step (C) with a differentiation medium to give insulin producing cells.

2. (Previously presented) The method of claim 1, wherein the medium used in step (B) comprises about 100-10000 U/ml of leukemia inhibitory factor.

3. (Previously presented) The method of claim 1, wherein the medium used in step (B) comprises about 2-100 ng/ml of bFGF.

4. (Previously presented) The method of claim 1, wherein the medium used in step (C) comprises nicotinamide, insulin and fibronectine in a serum-free cell culture medium.

5. (Previously presented) The method of claim 1, wherein the insulin producing cells are insulin producing pancreatic islet-like cell clusters.

6. (Previously Presented) The method of claim 5 wherein the medium used in step (D) comprises nicotinamide, insulin and laminin in a serum-free cell culture medium.

7. (Withdrawn) The method of claim 1, wherein the functioning cells are nerve-like cells.

8. (Withdrawn) The method of claim 7, wherein the medium used in step (D) comprises L-lysine, insulin and laminin in a serum-free cell culture medium.

9. (Previously Presented) The insulin producing cells induced from mammalian ES cells by the method of claim 1.

10. (Previously Presented) The insulin secreting cell clusters induced from mammalian ES cells by the method of claim 5.

11. (Withdrawn) Nerve-like cells induced from mammalian ES cells by the method of claim 7.

12-13. (Canceled)

14. (Withdrawn) A method for treating a mammalian patient having disorders in nerve function, which comprises implanting nerve-like cells induced from allogenic ES cells by the method of claim 7 to the patient.